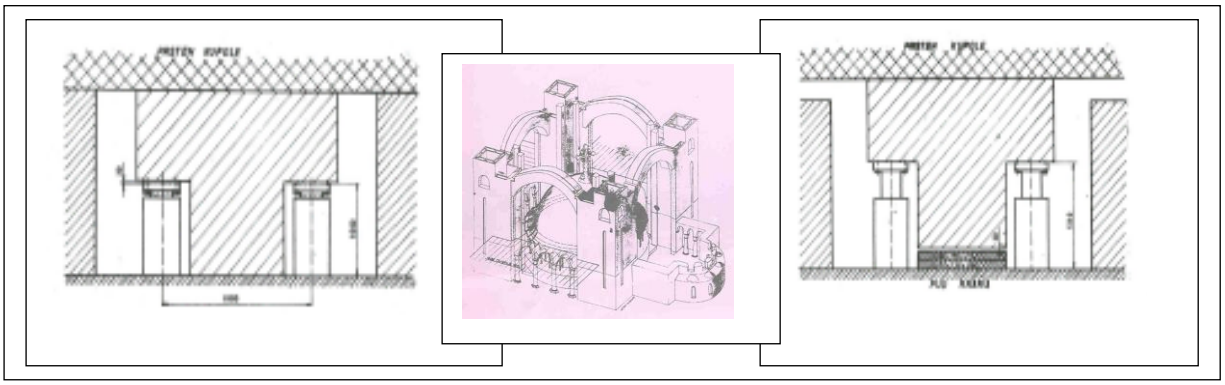
Raising the dome of St. Sava Temple in Belgrade

1989-2019 - thirty years later

Construction od the St. Sava Temple started in 1936, and it was not continued until 1984. Today we have barely two more years left until finishing of the construction of the temple. Year 1989 was particularity significant for the temple construction because at that time something new was done in the construction technology. Dome was built on the ground and lifted to the final height with electro-hydraulic system.

At that time, manufacturer of hydraulics and pneumatics from Trstenik, company Prva Petoletka, and its branch specialized in design and development of these systems, PPT-Engineering from Belgrade, were given the task to erect the dome, as recommended manufacturer and designer of electro-hydraulic systems, and the idea of purchasing equipment and lifting technology from abroad was discarded. Because of that the challenge became even bigger, as well as the responsibility.

The goal was to raise a 27 m high and 4000 t heavy dome to the final height of 43 m.



Dome was lifted with 16 cylinders clustered in four groups for the support. Each cylinder had pressure sensor to enable monitoring of load distribution, stroke of each two cylinders was followed by one pressure sensor in order to control synchronous movement. Lifting was done in stages with planting of concrete slabs to provide support after each lifting stage of 220 (240) mm. Lifting was carried out with operating pressure of 300 bar. Wide application of proportional valves and stroke sensors was not very common at that time, so PPT-Engineering made a big step toward the advanced technologies of modern electro-hydraulic system design.

The performance of lifting was unique at the time, so a special spot (a bleacher) was placed at the construction site for monitoring the lifting procedure in May 1989. The extent of attention devoted to this event is clearly expressed by the fact that Belgrade-based company Energoprojekt hired a special charter flight for delegation of civil engineering experts from Iraq to study construction works and lifting technology.

Today, we remember this significant event in the history of PPT, and especially in history of PPT-Engineering with joy because that is when we overcame the great challenge with our own strength.